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Archeological Survey In The Jefferson Planning Unit of Jefferson County, Southwestern Montana

By: Vern Scarborough
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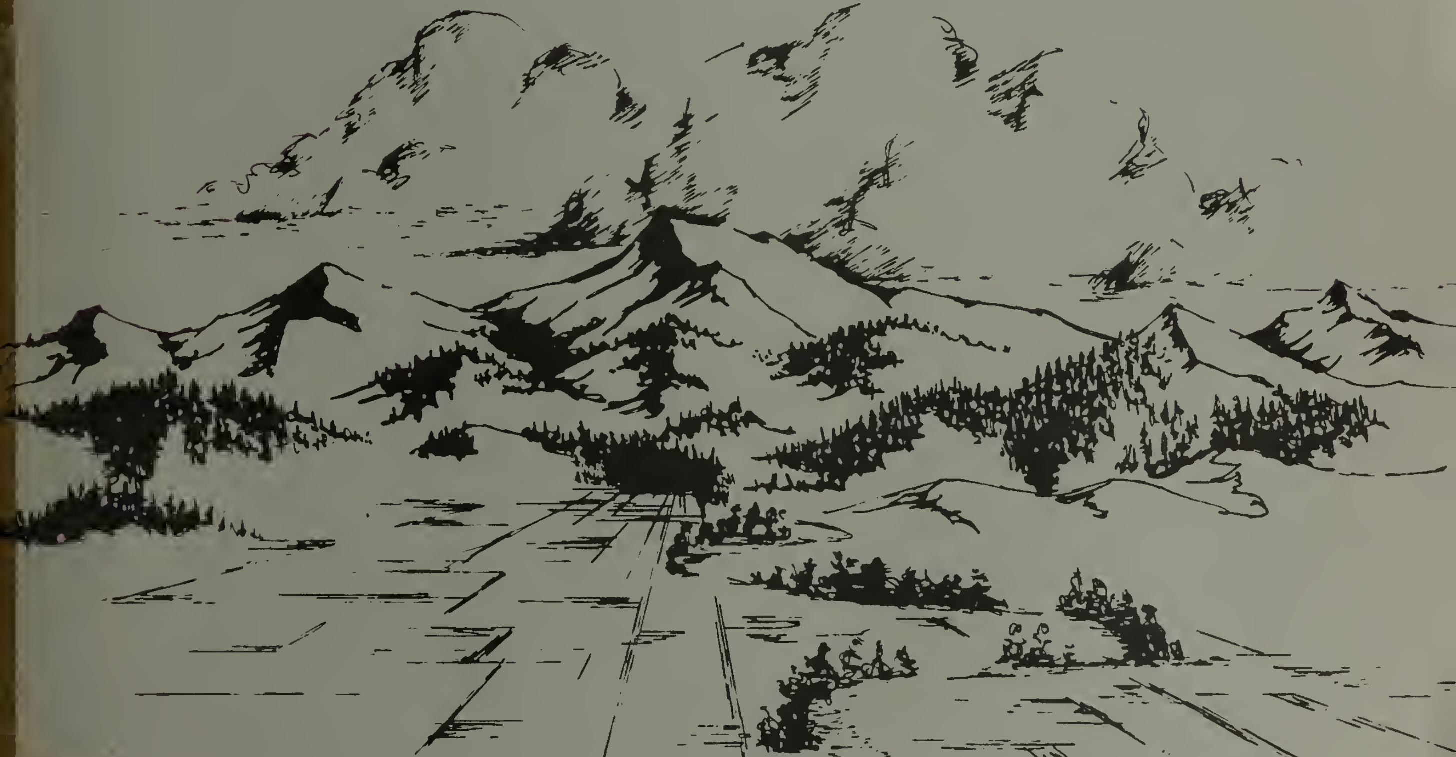

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ARCHEOLOGICAL SURVEY IN THE JEFFERSON PLANNING UNIT OF JEFFERSON COUNTY, SOUTHWESTERN MONTANA

Vernon Scarborough

August 1975

a Western Interstate Commission for
Higher Education (WICHE) Project
sponsored by the Dillon District Office
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Other members from the Dillon District Office who furnished information and cooperated with the project were: Jack McIntosh, district manager, Jesse F. (Frank) Barnes, realty specialist; Floyd Blank, administrative officer; James H. (Smokey) O'Connor, Chief, Division of Resource Management and Operations. James (Jim) Wilkinson provided assistance in classifying the local geology and wrote the appendix to this report. Archeologist, Dan Martin from the BLM Montana State Office spent three days assessing and interpreting the archeological potential of the study area. His support proved invaluable.

The Pallister family of Boulder, Montana, were my principal informants. They permitted photographing of their collection and they identified site locations for me. The Streib family of Boulder also provided a wealth of information. They personally guided me to sites previously unrecorded and allowed their collection to be photographed. Don Larson, also of Boulder, permitted photographing of the pestle associated with site 24JF78.

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Diana Scarborough was also instrumental in the completion of the project. She sketched artifacts, prepared graphs, helped with the research and proofread all drafts of this paper. I alone am responsible for the organization, interpretations and content of the following pages.

INTRODUCTION

This narrative represents only the most cursory glance into the prehistorical events which shaped the study area. Additional time and energy are required for an adequate understanding of the potential significance of the area. Any hypothesis derived from the scanty data base must be considered extremely inferential considering the limitations placed on a project of this scale.

The prehistory of the study area has been badly neglected by professional archeologists, while amateur diggings go unsupervised and, worse yet, unpublished. Pot hunting has destroyed many key sites in the area. Fortunately, the Department of the Interior (BLM) is very interested in preservation programs dealing with significant paleontological, archeological and historical sites. The Antiquities Act of 1906 (Public Law 59-209) has made looting of any potential prehistoric or historic site a crime. Executive Order 11593 has instructed federal agencies to "locate, inventory, and nominate to the Secretary of Interior all sites, buildings, districts, and objects under their jurisdiction or control that appear to qualify for lisiting in the National Register of Historic Places (Sec. 2(a))." More recently, the Moss-Bennett Bill or Archeological Conservation Act of 1974 (Public Law 93291) "essentially...provides for the recovery, protection, and preservation of significant scientific, prehistorical, historical, or archeological data, when irreparable loss of such data is threatened by federal construction projects, activities, or programs (Lipe and Lindsay 1974;p. 196)."

Looting activities in the Jefferson County area, as well as the rest of Montana, have made the deletion of precise locational directions from this report necessary. However, authorized personnel who represent preservation or scholastic programs, and who abide by federal regulations, may receive more information about sites from the Dillon Resource Area Office.

This report attempts to organize a limited body of data collected during a nine week archeological reconnaissance survey within the Jefferson Planning Unit. Specific emphasis was placed on an area of twelve contiguous township sections located near Boulder, Montana. Other areas were either systematically or spot checked. The study area included the large tract of land extending north to Boulder, south to Whitehall and defined by Interstate Highway 90, east to the western margin of Deer Lodge Forest and west to Broadwater County line.

The format of the report is to present a narrative of two parts, a brief description of the chronological sequence demonstrated in the area and a discussion of the environmental zones occupied.

CULTURAL CHRONOLOGY

General chronological schemes for the Northwest High Plains have been previously recorded (Mulloy 1958 and Wormington 1965). The surface nature of the sample collected within the study area allows for limited interpretive historical reconstruction work. It appears, from this surface debris and private collections, that the upper Boulder River Valley and the adjacent region have been continuously occupied since Paleo-Indian times. This range of human habitation suggests more than simple transitory hunting camps frequented once every twenty years. A more permanent familiarity with the area is implied.

Big game hunters

Four Paleo-Indian projectile points from the study area were shown to me by a local collector. During the survey, two additional, unidentifiable Early Period points were collected (Les Davis, personal communcation). Two Cascade-like points of problematic antiquity appear in a private collection.

One Scottsbluff projectile point and one Meserve-like projectile point were taken from the Alpine Park setting (24JF81). The two Cascade points were also derived from this site. Of the two Early Period points collected during the survey, one occurred in a Prairie Hills setting and the other in a transitional Dry Plains/Prairie Hills environ. The MacHaffie site (24JF54) (Forbis 1955) appears to occupy a similar setting. (This site lies one mile east of the Helena Land-Use Study area. A reevaluation of this site, using data collected from the study, may shed light on Paleo-intermontane economics.)

An "ice-free corridor" appears to have existed within the greater portion of Montana during early Paleo-Indian times. Presently, it is a moot point whether Clovis-Complex Hunters originated further south and migrated north with large game populations (which were dependent on the tundra steppe grasslands at the foot of the receding glacial masses) (Agogino, personal communication), or if these Big Game Hunters arrived directly from the Old World during Late Wisconsin times. Either hypothesis seems viable, at this time. Reeves concludes that,

> "...an 'Ice Free Corridor' has probably existed since Illinoian or Early Wisconsin times. Consequently no physiographic barrier in the form of a 1500-mile, 2000' thick solid mass of ice existed (if indeed it ever existed) to prevent the movement of biotic populations, from north to south. Whether the environment, particularly in the high-latitude areas, was suitable during the times of maximum glaciation to support viable biotic populations is another matter entirely (Reeves 1970:p. 110).'

Hunters and Foragers

Numerous projectile points of the Middle Period appear in private collections (from 24JF81 and others). One McKean point, one Pelican Lake point and one Duncan point were collected during the course of the survey. All biophysical settings, except the Forested Bathylith zone, appear to have been utilized. This suggests the selection for plants and animal resources (discussed later) up and down the slopes of the study area.

The much talked about Altithermal warming trend is coincidental with the appearance of this technology, but its effects on Middle Period populations may have been less extreme than previously reported. Reeves states that:

> "Major occupational sites in the Northern Plains concentrated in the stream valleys and are, depending on the age, located on the present flood plain or older terraces. One would assume that these would be characteristic settlement patterns during the Atlantic (Altithermal) climatic episode. Since flood plains deposits of this age have been destroyed during degradation, or are deeply buried by subsequent infilling of the channels, the sites would either be destroyed or deeply buried (Reeves 1973:p. 1243)."

Reeves' comments are in answer to the paucity of visible Middle Period sites on the Plains at large. However, such a riverine summer base encampment might be postulated for the study area. The abundance of point types of the Middle Period found in most of the biophysical settings argue for a more perennial exploitation of the available resources.

The Oxbow projectile point, in Reeves' opinion, is an outgrowth of Bitterroot Industries further west. Since Bitterroot and Salmon River point types are dated to the interval 5500-3000 BC, the appearance of the Oxbow point argues for Altithermal occupation. Three Oxbow points were displayed by collectors (from 24JF81 and others) (Reeves 1973:p. 1243).

Plains Subsistence Economy

Numerous points of the Late Period are represented in private collections of the area. Two Late Plains side-notch projectile points and one Plains triangular point were collected during the survey. All biophysical settings were utilized during this period.

Prior to the historic period, Flathead and their ancestry inhabited the study area. It appears that a band of Flathead dwelled to the east of Butte and south of Helena (Teit 1927-8:p. 309).

The evidence for Salish influence in the study area is supported archeologically at sites 24JF78 and 24JF60. The diagnostic stone pestles associated with these sites appear in private collections.

> "Pestle usage was lacking in principle to the east, in the Great Plains and Central Plains. Hence, we must look to the west for their origin, vizi, the Columbia River Basin proper where similar implements were used (Malouf 1962:p. 4)."

The pestle from 24JF78 (Prairie Hills/Wooded Ridge and Mountain setting) is approximately 30cm in length with a pronounced beveled knob at its proximal end. Finely, incised slits encircle the beveled knob. A less ornate polished pestle was purported as being associated with site 24JF60 (Alpine Park setting).

Later historic groups within the study area include Blackfeet, Crow, Nez Perce and Shoshone. No archeological evidence has enabled the association of site assemblages with individual tribes.

DISCUSSION OF METHODS AND PURPOSE

There was a more pragmatic reason for sampling the relatively intensively studied area. This particular tract represented one of four known Geothermal Resource Areas (KGRA's) in Montana. Because of the recent interest in developing alternative forms of energy, the BLM and the Forest Service found it necessary to evaluate the archeological potential of this area. In addition, a proposed lease area circumscribing the KGRA and the town of Boulder was to have priority in any archeological investigation of the region.

From a purely managerial standpoint, it was decided that a proper approach to the project would be to try to determine where visible archeological debris from within the study area might be found. It was hoped that archeological sites would reflect certain environmental preferences in location. Six broad biophysical zones were defined, incorporating Craighead, Craighead and Davis' work (1963) and a recently published study by Denney, Carlson and Crowley (1973). This information, in turn, was to be used as a general predictive indicator for the immediate locality.

In order to accomplish the study, some type of sampling design had to be employed. After laboring over the significance of "boxcars" and "snake eyes," it was decided that a two percent systematic transect sample of a twelve section area, three miles north/south by four miles east/west representing most of the defined biophysical zones, would have to do. It was hoped that this approach would elucidate the interrelation between biophysical zones and the associated archeological surface debris, rather than sampling biophysical zones at random.

It is hoped that a more thorough study of the KGRA, incorporating a systematic sampling design, will reflect the habitats men were selecting in the past. Perhaps then, this information can be applied with more precision and assurance to areas outside this intensive study area. Actual inferences from this study about the selective mechanisms behind aboriginal decision making should be considered entirely speculative, considering the size of the sample, the surface nature of the sample and the degree to which the area has been previously collected. However, considering these biases, the information presented below may have some application for predicting the location of future sites by spot checking comparable biophysical settings. (See Gould, Unpublished Manuscript: p. 3-5 for discussion of "Archeological Visibility.")

BIOPHYSICAL SETTINGS

Of primary importance to this study is a recently published report entitled Land-Use Capability Study by Denney, Carlson and Crowley (1973). This report covers an area of some twenty township sections south/east of Helena, Montana, and approximately twenty miles north-north/west of the study area. Among other concerns, the authors attempt to classify variations in the biophysical scheme. Four "landscapes" are defined, providing the broad range of environmental settings into which biophysical variability is lumped. It was found necessary, for the purposes of this report, to add two additional settings not adequately represented in the south/east Helena study.

Soils and gradient have a strong position in any discussion of biophysical setting. Under the limitations of time and resources available, these variables were not intensively studied before defining the biophysical environs. However, by utilizing the data presented in the Helena study and that collected in the field, flora and fauna have been investigated.

Because plants and animals present in the biophysical environment select particular soils and slopes for habitation, the presence of tight controls on their distribution may not be essential to this study. By defining flora and fauna, we may be indicating the general soil types and slope angles.

From the distribution of campsites of any duration, it is suggested that proximity to a water source was a prerequisite. In the intermontane setting studied, acquiring a sufficient supply of water from the ubiquitous rivers and streams was not difficult. However, from the limited sample it would appear that the builders responsible for stone formations were not selecting for proximity to water.

It should be noted at the onset that environmental change due to climatic variation, as postulated by the chronological schemes of Antevs (1950) and, more recently, Mulloy (Jennings 1968:p. 136), suggest a different set of variables to which Archaic groups may have been adapting than are present today. However, more recent work argues to the contrary.

> "...consideration of the current palynological data and climatic models indicate that a grassland environment which supported a viable bison population existed at this time 5500-3000 B.C. Examination of the archeological data indicates the lack of evidence for human occupation is a result of sampling, geological variables and nonrecognition of the artifact types in surface collections (Reeves 1973: p. 1221)."

The following are descriptions of environments:

Dry Plains

FLORA:

- very dry needle-and-thread grass communities
- sandburg bluegrass short grass steppe
- cheatgrass short grass steppe
- blue grama grass short grass steppe

FAUNA:

- songbirds
- hawk
- owl
- deer mice
- cottontail rabbit
- skunk
- coyote
- red fox
- deer
- antelope
- black bear

The Dry Plains setting contains cultural debris wherever creeks and streams lie in proximity. Sites within this area may be affected by the great quantity of Tertiary and Quaternary sediments obscuring additional subsurface debris.

The short grasslands of the Dry Plains appear to have been a strongly adaptive feature in bison ecology.

> "Mature short has a 1:6 protein-carbohydrate ratio which is not only higher than that of the prairie's grass, but corresponds to the protein-carbohydrate balance required by bison. Further, the short grasses have a higher retention rate for protein when dry. Consequently, bison thrive best on the short grass plains. This fact is substantiated by historical literature which indicates that the short grass plains supported the larger bison populations while the prairies contained small herds and scattered individuals (Reeves 1973: p. 1228)."

Great herds of bison are historically reported to the north and east of the study area (DeVoto 1953:p. 157). This area probably harbored bison herds with increased populations during the winter months. Bison probably migrated into valley bottoms with abundant tree cover when the first snows fell on the plains. Early spring and summer hunting parties would not be expected to leave great quantities of artifactual debris, considering the number of bison slain and the transitory nature of their encampments. The more elaborate late summer and early fall drives appear to have taken place in the Dry Plains/Prairie Hills transitional zone where the topography is more broken.

Ewer (1955, 1958) and Oliver (1962) support the notion that ethnohistoric Plains groups, with the exception of the Comanche (Oliver pp. 71-76), utilized the plains in the early spring and summer months at the subband societal level. These small aggregates would be expected to leave little trace of their past when trailing the gregarious bison. An overnight campsite, a chipping station or possibly some fortuitously preserved skeletal part with the necessary point or scraper at its side might be anticipated when a more rigorous and thorough examination of the area is conducted.

Prairie Hills

FLORA:

- rough fescue prairie
- bluebunch wheatgrass prairie
- dry needle-and-thread grass communities
- prairie junegrass short grass teppe
- sandburg bluegrass short grass steppe
- ponderosa pine forest, woodland and savanna

FAUNA:

- snakes
- songbirds
- squirrel
- chipmunk
- porcupine
- rabbit
- skunk
- red fox
- coyote
- badger
- deer
- antelope
- mountain lion
- bear

The Prairie Hills setting seems to have been a highly advantageous resource area by aboriginal standards. Isolated pockets of this habitat, preserved within the study area, may represent conditions unchanged from those of prehistory. In describing portions of the Musselshell Gravelly Loam Site Association of the Ascension Mountain Region of the Helena landuse study, Denney states: "Kovalchik, a forest ecologist with the Intermontane Forest Experiment Station in Missoula, stated that he thought this was one of the best examples of natural prairie left in the State of Montana (pp. A61-A62)."

In an area subject to the scars of the plow, these undisturbed locations would strongly favor the preservation of archeological sites. This situation has probably produced a disproportionate loading of the sample favoring the location of sites in the Prairie Hills. However, it should be clear that the purpose of this report is not to create a sound model of aboriginal site selection, but to shed light on the presence of archeological sites in the present "real" universe.

The undulating swale and hill topography of this setting may have offered convenient lookout locations for surveillance of both migrating game and marauding enemies (ethnohistorically, this area was a highly contested hunting ground). Such a setting would have allowed for encampments within the protection of the swales. These campsites would not only be hidden from view, but shielded from the prevailing winds if the orientation of the swale was right. Proximity to water was always a selective factor in camp site location.

Within this habitat, numerous stone configurations have been reported. This type of stone work has been poorly investigated and usually dismissed as ceremonial. Wormington (1965) describes stone cairns and effigy formations in Alberta, and Wedel (1961) discusses stone formations on the Northwestern Plains. Mulloy's definitive work (1958) briefly mentions their presence. Together with the ubiquitous tipi ring, these sites have been insufficiently studied.

Wooded Ridge and Mountain

FLORA:

- Ponderosa pine forest, woodland and savanna
- Douglas fir forest, woodland and savanna
- bluebunch wheatgrass prairie
- rough fescue prairie

FAUNA:

- small mammals
- songbirds
- deer
- antelope
- red fox
- porcupine
- rabbit

The Wooded Ridge and Mountain biophysical zone does not appear to have sites. If we are considering a seasonal strategy, then the area in question may have carried populations of forest mammals that were preyed upon by wintering hunters. The area north of Helena, aptly named Gates of the Mountains, enabled transitory groups to tap more than one environ. They had access to the classic Plains environs of bison and short grassland communities east of Great Falls and to the varied plant resources and forest-dwelling mammals found at the different elevational zones of the Helena and Boulder valleys.

The likelihood of the study area being inhabited by more or less sedentary groups prior to pre-white contact seems strong. Such Plateau-based subsistence schemes may have exploited the resources of the area, following a more restricted seasonal movement pattern. This indicates transhumance within a range restricted by the abundance of resources rather than their scarcity. That is, the pressure or incentive to migrate out of a spacially limited area was less than the energy expenditure needed to make the move.

Vegetal resources, as described in other works, could be exploited at graduated elevational levels during successive periods of spring, summer and fall.

> "Ten such zones are found in the Rocky Mountains and they can be recognized by one or two key plant species. There is Considerable integradation of zones (my emphasis). Each zone attains its characteristic development within certain altitudinal limits, but there are often extensions up or down, depending upon physiography; aspect, exposure, moisture and soil conditions (Craighead, et al., 1963: XV)."

The importance of plant foods to aboriginal survival has been deemphasized because of the vast herds of bison men could, and did, utilize. However,

> "The growth of timber and brush is much more profuse and in greater variety here than in the Plains farther to the east or in the Columbia Plateau. Moreover, the natural life zones at various elevations made it possible for the intermountain natives to follow the maturation and their favorite plants up the hillsides, and permitted a greater variety of plant foods to be sought over an extended season (Malouf 1956:p. 46)."

Forested Bathylith

FLORA:

- Douglas fir, woodland and savanna
- quaking aspen forest
- kinnikinnic forest
- natural grasses

FAUNA:

- rattlesnakes
- songbirds
- small mammals
- mountain lion
- deer
- elk
- bear

The Forested Bathylith area appears to have been less useful to man than other settings with greater site densities. Isolated rock cairns were located within this area. Malouf's hypothesis that these are stone accumulations "as travelers tossed their contribution to the heap (1962: p. 4)" is probably not applicable within this setting. His discussion may define the large, infrequently occurring cairns further west (Malouf 1964: pp. 13-14). However, the diminutive size of the cairns within the study area and the frequency of their occurrence in an area of obstructed vision may argue for their trail-path utility. It should be noted, that this hypothesis could be tested by plotting all cairns from an intensively investigated area and then tracing potential trade and migratory routes through the area.

An advantage of an otherwise difficult topographic and vegetational working situation is that historic populations have not severely damaged archeological remains in these remote areas. Because the area has not been subject to the plow, many surface features might be expected to survive. This is not the case with the undulating grain fields to the north and east of the study area.

Alpine Park

FLORA:

- sedge and other natural grasses
- bluebunch wheatgrass prairie
- quaking aspen forest
- Douglas fir forest, woodland and savanna

FAUNA:

- songbirds
- hawk
- eagle
- small mammals
- deer
- elk
- bear

The Alpine Park setting was only spot checked for cultural material; (other areas were both systematically checked and spot checked). The inaccessible nature of many of these parks made reliance on informant site location the only collected data source. However, the wealth of cultural material inventoried and the photographs of private collections should argue for a high site density in these settings. The variety of sites in type and time depth suggests that this area was selected quite often. One site appears to demonstrate a completed occupational sequence over the last 9000 years. This is reflected in the stone typology of the Pallister collection.

Game and vegetal products are abundant and suggest that both Early and Middle Period hunters and foragers utilized the spring water settings during much of the year. Bob Schutz (personal communication) has suggested that the migratory movement of present elk populations, and possibly other gregarious animals of the intermontane regions during the past, supports the notion that less transitory groups occupied the area.

It is difficult to assess the severity of winter climatic conditions on aboriginal occupations in this setting. However,

> "The mountains to the north and east of Helena provide a barrier to shallow Arctic air masses and to a degree, protect the valley from cold air. On the other hand, after period of extreme cold and the movement of relatively warm maritime air across the region, cold air may remain trapped in the valley several days after frontal passage.
>
> "Meteorological and topographical conditions of the Helena Valley favor the development of temperature inversions. The greatest frequency of inversions occurs during the cold

> half of the year. Winter inversions are strongest and most persistent. Spring is relatively cloudy and windy. These conditions tend to inhibit inversion formation. Summer has more hours of inversion than might be expected because of a high frequency of clear nights. However, summer inversions are weak and quick to dissipate because of daytime thermal heating (Denney, et al. 1973:pp. E3-E4)."

The pronounced effects of temperature inversions in the lower valley bottoms and canyon heads may have driven both human and animal populations into the parklands. It seems feasible that past human populations were occupying these alpine retreats during winter months.

The impediment of snowfall on this setting may have been less than in the surrounding Forested Bathylith and Wooded Ridge and Mountain settings. "It should be noted that snow depth on the ground is more related to winds and sun exposure than elevation (Denney, et al. 1973: E20)." The moderate to moderately steep slope (5°-25°) of the open Alpine Park setting supports this contention.

The statements in regard to the absence of inversions during the early spring and the increased velocity of the wind suggest that men were probably moving from the parklands and depending primarily on the plants growing further down the slopes. Ewers indicates that among the more nomadic Blackfeet,

> "March was remembered by the elderly Indians as a difficult month during which the buffaloes began to drift eastward and northeastward away from the Indians winter villages. The bands would be forced to subsist on smaller game or go hungry... (1955:p. 126)."

Summer selection for this locality may have been less for economies strongly dependent on hunting. The great ungulate herds would have migrated out. However, more sedentary populations could have survived comfortably on the smaller mammals and plant resources of the setting. Elk, considered a prehistoric Plains animal on negative evidence alone, may have helped sustain human populations at these elevations (Malouf 1956:p. 46).

This model is supported by a reliable informant interview indicating that site 24JF1019 (conical lodge) was permanently occupied by a historic Indian family (Pallister, personal communication). This would be contrary to Kidwell's statement,

> "In general, their conical lodges use seems to have been as eagle trapping and/or winter hunting lodges on the

> eastern edge of the Northwestern Plains, and primarily as temporary overnight shelters for traveling war parties on the Northwestern Plains proper (Kidwell 1969:pp. 20-30)."

Unfortunately, the site (24JF1019) has been potted and probably contains little usable ethnohistoric scientific value.

Flood Plain

FLORA:

- bulrush-lily marsh
- native grasses
- cultivated fields
- deciduous trees
- (Numerous species and subspecies of the above)

FAUNA:

- shell fish
- fish
- (most of the animals previously mentioned from other biophysical zones frequent this setting)

It is difficult to assess the degree to which this setting was exploited. The areas systematically sampled were covered with dense vegetation which probably concealed any archeological evidence. Informant interviews revealed the presence of two unusual sites within the boundaries of this biophysical setting.

Site 24JF70 (masonry site) was probably a winter dwelling, judging from the abundance of summertime mosquitoes and its proximity to the necessary woodlands for wintertime fuel. The site is unique in that the quartzite blocks comprising the structure appear to have been shaped and are mortared with a sand-tempered paste. A dark chert carinated end-scraper was taken from the floor of the wall structure, arguing against a historic connection. The site is apparently the only one of its description discovered in Montana to date. It may suggest pre-Shoshonean contact with the Southwest. (It should be noted that Bliss, Hughes and Shippee of the Smithsonian River Basin survey during the Canyon Ferry Reservoir survey, recorded the presence of turquoise and serrated projectile points at site 24BW16. This site rests thirty-eight miles northeast of the study area.)

Approximately four miles south of the masonry wall lies site 24JF61 (Pictograph). Among the pictographs depicted, there are a series of solid red ochre dots. Conner's recent publication on Montana rock art (1973) makes no mention of the dot pattern motif, nor does a recent search through the literature on the local area. Considering the proximity of the above masonry site and the location of both sites within the Flood Plain environs, it may prove interesting to compare them with the rock art and masonry designs of Utah.

The Flood Plain may have fewer sites than other biophysical settings, considering the following. During the summer months mosquitoes and eye gnats were thick and difficult to elude. Summer probably also saw the large herd animals migrate east out of the study area towards the short grass plains. The abundant game that did frequent this setting was probably seldom disturbed by hunting and foraging encampments. Rather, campsites would be set up on the primary terraces above the Flood Plain. However, kill sites may be predicted on the Flood Plain and a high percentage of projectile points might be found at these locations. Even so, poor preservation and the general characteristics of kill sites suggest little chronological depth.

The winter month inversions, discussed earlier, may have placed the inhabitants of the area within the upper canyon heads and out of the chill of valley winds.

Flood Plain sites such as 24JF61 and 24JF70 may suggest an adaptation to a different climatic or seasonal scheme.

STONE TOOLS COLLECTED WITHIN STUDY AREA

Site No.	Projectile Point	Knife	End Scraper	Side Scraper	Scraper Plane	Drill	Marginal Retouched Flakes	Cores (Nodule)	Preforms	Chopper	Hammerstone	Stone Tools
24JF2								1				
24JF60							4					
24JF60(B)							1					
24JF61					1							
24JF62		1										
24JF63							1			1		
24JF70	2		1		1		2			1	3	
24JF71			1				2					
24JF73		1	1	1								
24JF75							2	1			1	
24JF76	3						1					
24JF78	3	1	4	2			3					
24JF79	1						1					
24JF80	2							1	1	1		
24JF110					1		1	5		1		
24JF111	2		2				1					
24JF114			1		1		2					
24JF1009					1			1		1		
24JF1012	1						6					
24JF1013							2				1	
24JF1015	1				1			1		1		

Site No.	Early Period	Middle Period	Late Period	Unknown
24JF70		McKean Basalt	Side notch Basalt	
24JF76		Pelican Lake Obsidian		Brown Chalcedony
24JF76 (Cont)				Tan Quartzite
24JF78		Duncan Obsidian	Side notch Brown Chert	Brown chert
24JF79				Basalt
24JF80			Triangular unnotched Brown chert	Corner notch Basalt
24JF111	Basalt			Obsidian
24JF1012				Obsidian
24JF1015				Brown chert
Find #9	Basalt			

COMMENTS ABOUT TIPI RINGS

Tipi rings are frequently found in both the Dry Plains and Prairie Hills settings. The immediate topographic features of an area are certainly at work in the selection of these sites. Mulloy tends to dismiss the conclusion that all stone circles are material evidence for tipi campsites (1958:p. 212 and less emphatically, 1965:p. 49). A critical inventory of tipi ring sites outside the study indicates that:

1) Rings seldom have artifactual material associated with them.
2) Hearths and living floors are markedly absent.
3) The dimensions of the rings are many times too small or too large to be analogous to the historic skin lodge foundations.
4) Many rings outside the study area are not located in areas suitable for campsites.
5) The rings are usually represented by many more stones than necessary to secure a hide tent.

The work of Thomas Kehoe (1958), however, lends credence to the tipi ring encampment idea. Using ethnographic analogy, Kehoe questioned informants and searched the literature of the Blackfoot Reservation. He found that boulders, or blocks of sod when stones were unavailable (possibly explaining the presence of numerous incomplete rings when their outlines are not exposed to erosional forces), were utilized to hold down tipi covers. He relates that Blackfoot, Cree, Crow and Dakota used this method ethnohistorically. Prior to the appearance of the horse and iron cutting tools, such ring formations were probably extensively used (tipi structures being smaller in diameter than during "horse days").

Ewers suggests that the tipi was smaller, because the material inventory of pre-horse society was significantly less than that of "horse days."

> "A normal day's march was about ten to fifteen miles. This was fully twice the distance the prehistoric ancestors of the Blackfeet could have made on foot carrying their meager possessions on dog travois and the backs of their women. A horse packing two hundred pounds on the travois could move four times the load of a heavily burdened dog twice as far on a day's march. So, animal for animal, the horse was eight times more efficient than the dog as a burden bearer. The application of the horse power to camp movement thus enabled Blackfeet to accumulate more property and to move it faster and farther as well (Ewers 1958:p. 94).
>
> "A century ago Denig (1930:p. 578) wrote that among the Upper Missouri tribes the size of the lodge was determined 'by the number of persons to be accommodated or their means of transporting it.' Two decades later Bradley (1923:p. 58)

> stated that Blackfoot lodge size varied according to the size 'desired or the wealth of the occupants.' The latter factor was of primary importance, for the larger the lodge the greater were the number of skins required for construction of its cover and the number, length and basal thickness of the lodge poles necessary for its foundation. Consequently, the larger the lodge, the greater number of horses required to transport it. (Ewer 1955:p. 131)."

Kehoe attributes the presence of diminutive stone rings to childrens' play or the dwelling of the elderly. Exceptionally large rings may or may not be associated with ritualistic practices.

The absence of hearths in tipi rings might be attributable to the practice of cooking outside the dwelling during summer months and the persistent winds of the Plains immediately scattering the evidence of ash. The paucity of artifactual debris at the stone ring sites may be a function of the mobile character of hunting societies, as such populations would not be expected to leave a great deal of debris at an overnite campsite.

However, this lack of cultural material is difficult to dismiss lightly. It makes better sense to assume that a hunting group would utilize a viable camp setting and the previously positioned stone rings for reoccupa-tion. Stones are abundant, but a certain amount of energy would have to be expended in their acquisition. This explanation would leave unanswered the problem of artifact paucity at tipi ring sites, but aid in explaining the excessive number of stones present at such sites. Tipi rings found in the study area have been heavily collected which would account for the marked absence of occupational debris.

There are many problems with the tipi ring hypotheses and grounded skepticism is a healthy approach. However, some of these stone formations are likely to be tipi dwelling sites.

OTHER STONE FORMATIONS

Mulloy (1958), Wedel (1961) and Wormington (1965) briefly discuss stone formations on the Northwestern Plains. Unfortunately, a thorough investigation of these monuments has not been conducted. The historic effects of the plow make studies of their distribution difficult. If more data could be acquired concerning their locations, perhaps a viable thesis could be written. A hypothesis would require interpretive information from other quarters of the world (e.g. What would be the energy expenditure in placing these stones where they lie and would particular rituals of other cultures be analogous to postulated Plains based rituals?).

During the altithermal time span, areas to the east and south may have been oriented towards foraging subsistence patterns. Under this scheme, Lee's (1968) work with the Kalahari Bushmen (S. Africa) may have some application. In a society dependent on foraging, Lee found that

> "Even the hardest working individual in the camp, a man named Toma who went out hunting on sixteen of the 28 days, spent a maximum of 32 hours a week in the food quest (Lee 1968:p. 37)."

Lee argues that the amount of leisure time available to hunters and gatherers is considerably greater than in pastoral groups. If this were the case with Plains foragers, then the question arises concerning what such groups do with their "spare time." Lee's study indicates that

> "A woman gathers on one day enough food to feed her family for three days, and spends the rest of her time resting in camp, doing embroidery, visiting other camps, or entertaining visitors from other camps.
>
> "The hunters tend to work more frequently than the women, but their schedule is uneven. It is not unusual for a man to hunt avidly for a week and then do no hunting at all for two or three weeks. During these periods, visiting, entertaining, and especially dancing are the primary activities of men (Lee 1968: p. 37)."

It might be interesting to compare the energy expended in the preparation and practice of dance ceremonies, gaming, etc., in ethnographic hunting and gathering groups with the energy expenditure involved in the construction of the stone monuments of the Plains.

Practical problems arise in this approach. Malouf relates that stone piles (cairns) were not constructed as deliberate monuments at certain moments in time. He contends that cairns

> "...were made as stones accumulated when travelers tossed their contribution to the heap. Motives behind the practice

> varied somewhat from one locality to the other, but they were aimed at such goals as a successful journey, good health and long life, or good luck (Malouf 1962:p.4)."

The continuous rock alignment (24JF69) within the study area is similar to other enigmatic structures found in the intermontane region. It appears to represent much more work than necessary, if it were simply a trail marker. Many of the cairn structures better satisfy this hypothesis with less effort. But even these seem unnecessary, since the ruts made by the dog travois and discarded paraphenalia of passing would adequately define a trail in periodic use.

An informant related that the alignment was constructed as a territorial demarcation. Ethnohistorically, this is difficult to substantiate because of the extremely mobile nature of the groups utilizing the study area. However, if the "wall" is considered to have been a Plateau device, some credence is lent to this assumption. In spite of the absence of direct ethnographic comparisons, the more sedentary Flathead would be more likely to have adhered to such a boundary than the mobile Plains groups. That the Flathead were in the study area prior to "horse days" seems questionable.

> "It appears that there were at least four distinct bands having their main winter camps in the western parts of the country. Of these, it seems that one was on a river near Helena, one near Butte, another smaller one somewhere east of Butte, and one somewhere in the Big Hole Valley. The Big Hole and Helena bands are said to have been large...The inference is that some were nomadic to a large extent, while others, probably the majority, generally wintered in definite "home" localities (Teit 1927-8: p.309)."

The preceding information and other difficulties encountered in a problem testing approach to this and other questions concerning the Plains should not be considered insurmountable. Instead, an effort should be made to state the problems more precisely and the variables should be more tightly controlled.

SEASONALITY

The position of tipi rings on a primary terrace above a permanently flowing water source strongly suggests that they were summer and/or fall occupational camps. Their appearance in clusters of ten or more argues for brief reoccupation of an area by extended family band units or contemporaneous occupation by larger groups for longer periods of time. Evidence for the latter hypothesis is strongly suggested at site 24JF66 (see "discussion of site") which lies near kill site 24JF65.

> "In the fall, buffalo cows, whose meat was much preferred to that of bulls, were prime. This was the great buffalo hunting season, when large numbers of animals were killed and quantities of meat were obtained, and when berries were collected and mixed with meat and tallow to make pemmican. Each family endeavored to put up as much dried meat, berries and pemmican as their winter needs or their means of transportation would permit. It was an active season, during which the number of camp moves was determined largely by the available supply of meat. Obviously camp could not be moved while women were busy drying meat and berries, and making pemmican. During a successful fall hunt stops of a week or longer in one locality were not uncommon. On the other hand, if a band failed to come upon buffalo in sizeable herds, more frequent moves were necessary. Generally, the more successful the hunting, the fewer camp movements were required during the fall season. Although the fall hunting season may be considered as ending with the establishment of the winter camp, the Blackfoot continued to hunt buffalo and prepare meat for eating in the severe winter months during the months of November and December or until heavy snows and bitter cold restricted this activity. In the years prior to about 1850 they employed drives over cliffs or into pounds constructed in the vicinity of the winter camp in the early winter hunting (Ewers 1955:pp. 128-129)."

Ethnohistorically, these hunting populations may have wintered in groups larger than the summer sub-bands, but smaller than the late summer SunDance aggregation. Prehistorically, the increased human population, later associated with the SunDance, probably reflected the aboriginals' conscious attempts to obtain adequate supplies of food, clothing and shelter prior to the winter months of austerity.

Late Plains subsistence patterns probably argue in favor of a fall, winter and spring occupational preference within the study area. Summer months in horse days would probably have found most of the human population further to the east.

> "In winter, as abundant documentary evidence testifies, the mounted hunters found the uplands generally unsuitable for continuous residence. Insufficiency of grass imperiled the welfare of the horse herds and drove even the bison off the uplands; storms brought serious complications to hunting and to camp movements, and would have made life suicidal for people caught away from shelter. Thus the large summer camps customarily broke up into smaller units--consisting usually of bands or extended family groups--which sought the relative safety of broken marginal terrain and timbered valley bottoms. Here the Indian found protection against inclement weather, fuel, water, forage for their horses, and often small game to supplement their stores of dried meat and pemmican. The historical documents pertaining to our area throw interesting light on where the horse Indians went in winter, when the uplands became untenable for some reason (Wedel 1963:p.9)."

Plateau groups such as the Flathead, prior to Blackfeet, Crow and Shoshone incursions, may have occupied the area permanently. They seem to represent a more sedentary adaptation to the intermontane regions (Teit 1927-8: p. 306). The influence of Plateau based subsistence patterns within the eastern intermontane regions of Montana probably has strongly determined the course of prehistory within the study area. Prior to horse days there was little pressure to migrate out of the study area. Nomadic or scheduled transhumance strategies probably were of little consequence.

> "Long ago the Flathead country was one of the very best countries for game and all kinds of food. On the Great Plains where buffaloes migrated in great herds, little other game was found. In the Flathead country, buffalo were always present, and at times, when they became scarcer than usual, plenty of other game could be procured. On the other hand, in large portions of the plains to the east, when the buffalo left, there was very little other game to be obtained; in many places, at least, not sufficient to feed a large company of people. For this reason, before the advent of the horse, portions of the great open plains were seldom visited (Teit 1927-28:pp. 344-5).

SUMMARY

The intent of this report is not to argue in favor of a particular prehistoric adaptation or to define the system's network connecting man's physical, biological and cultural environment with those locations in which he has left material remains. The purpose is to develop a plan of attack from which the next investigator can formulate hypotheses. It is hoped that subsequent work will be concerned with some of the questions posed and a problem testing approach applied to these questions.

The quality and quantity of ethnographic and ethnohistoric documentation available for the Montana region at large can be a valuable archeological tool. Ethnographic analogy to early peoples can be pushed only so far, but specific hypotheses generated from such accounts can be tested for accuracy.

In addition, the present upsurge in salvage archeological programming by federal agencies will serve as the impetus to a better understanding of past cultures. Real opportunities present themselves to the professional subject to these new regulations. Some might say that there are areas that have been adequately checked for antiquities by some subjective standard as to where sites should lie. Using our bias in this manner, it becomes possible to distort the actual location of aboriginal site selection. Even the most elaborate random and/or stratified sampling designs are subject to the biases of the investigator. It seems obvious that the people before us were affected by factors, unknown to us, which may only be made available when we are allowed access to their material remains. Early people were influenced by fluctuations in cultural tradition as well as the physical environment.

Federally funded projects require large samples to be taken of areas which may suffer environmental impact. These tracts are not selected for archeological investigation on cultural grounds; i.e., housing developments, urban renewal programs, etc., but for noncultural resources. This forces the archeologist to cover areas least suggestive of abori-ginal habitation. The motivation behind these surveys is clearance for industry. The sampling bias is no longer surface features readily discernable to those familiar with an area, but rather the search for raw materials such as coal, oil or geothermal activity. These programs will, if properly prepared, shed new light on those previously excavated site areas as well as reveal new information on areas previously considered marginal.

I have not carried the biophysical setting thesis beyond stating that one setting appears to have a greater density of sites than another. If a more complete sample of the area were available one may be able to suggest that certain types of sites were positioned in particular biophysical settings.

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